

FIG. 1

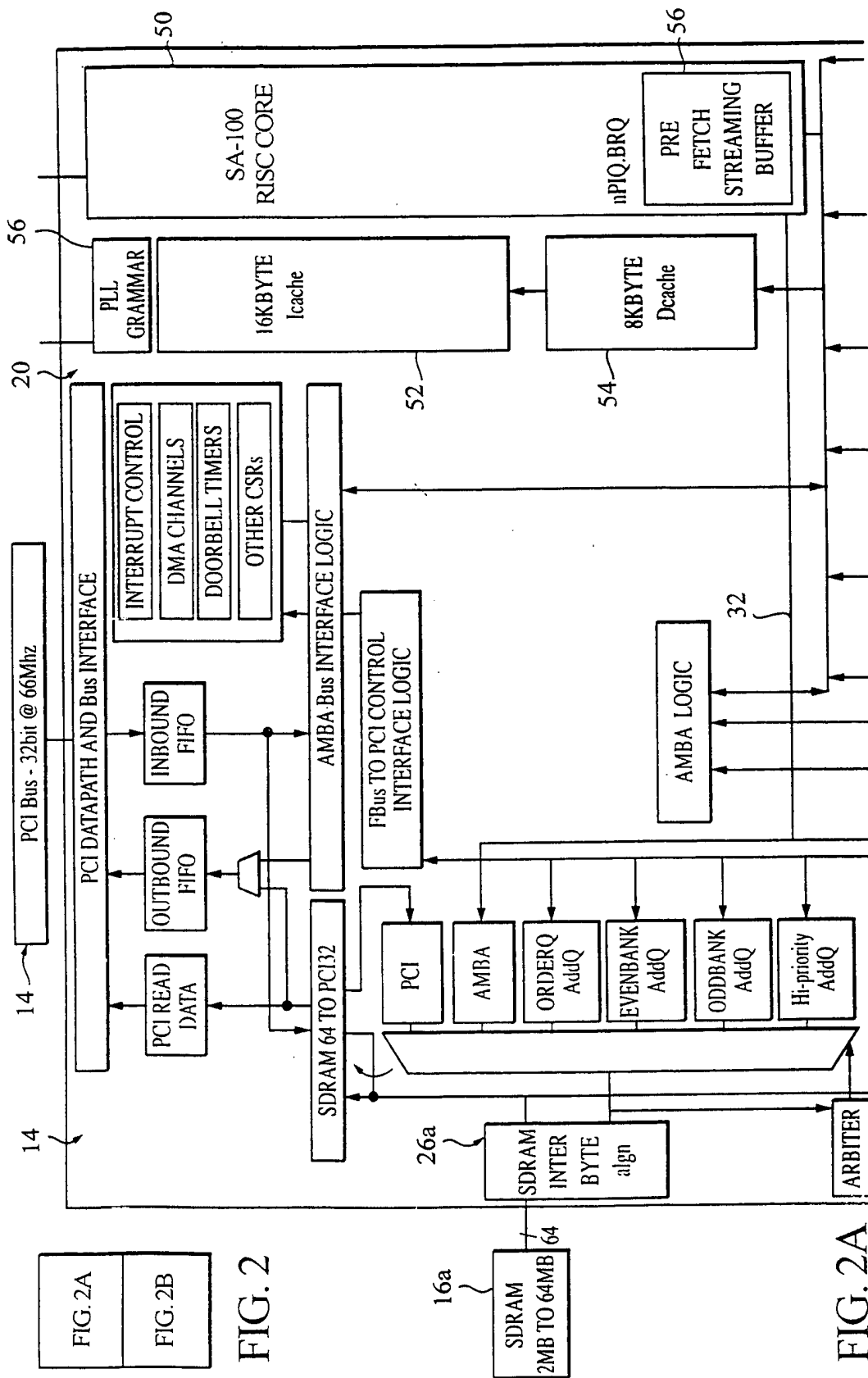


FIG. 2A

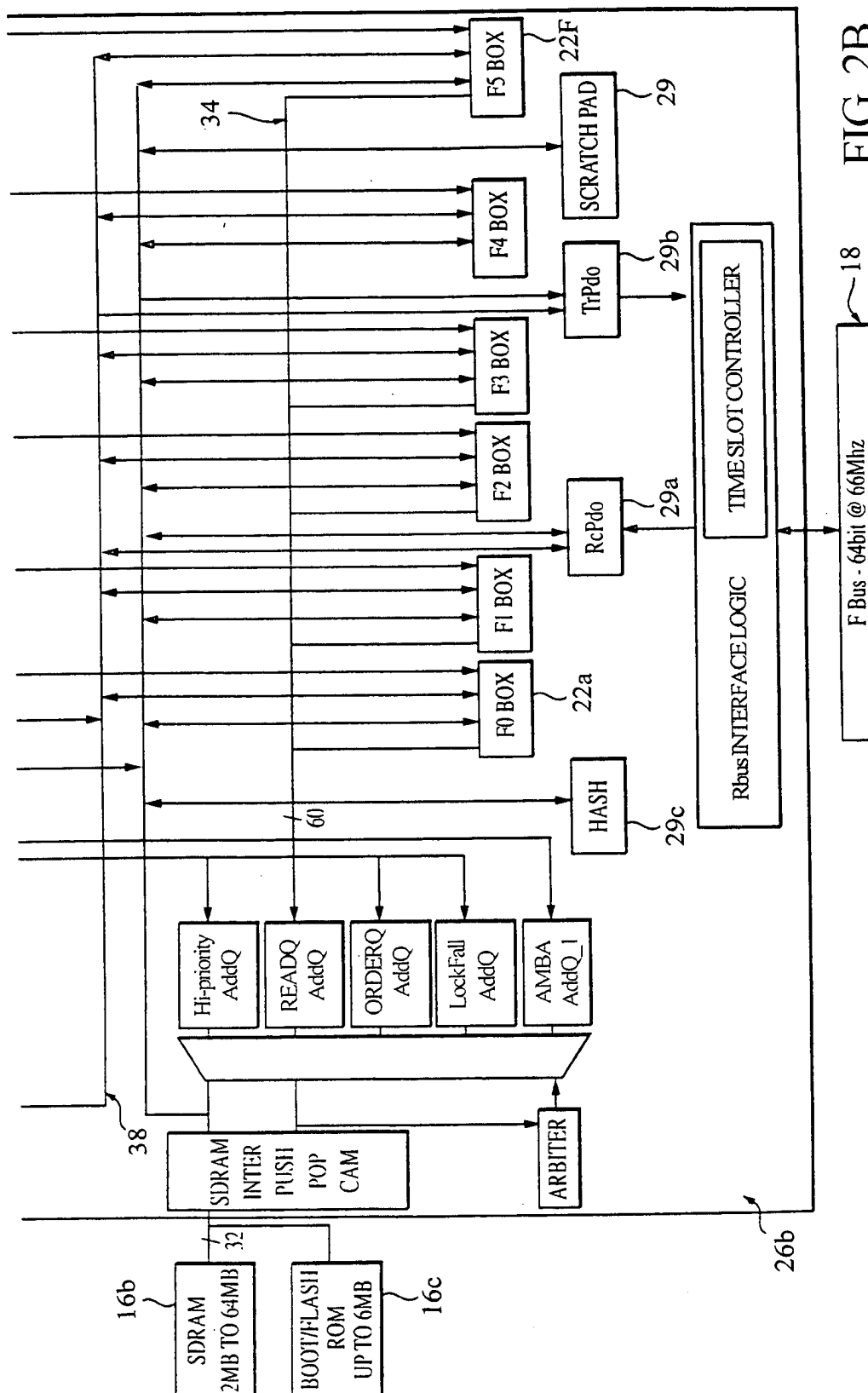


FIG. 2B

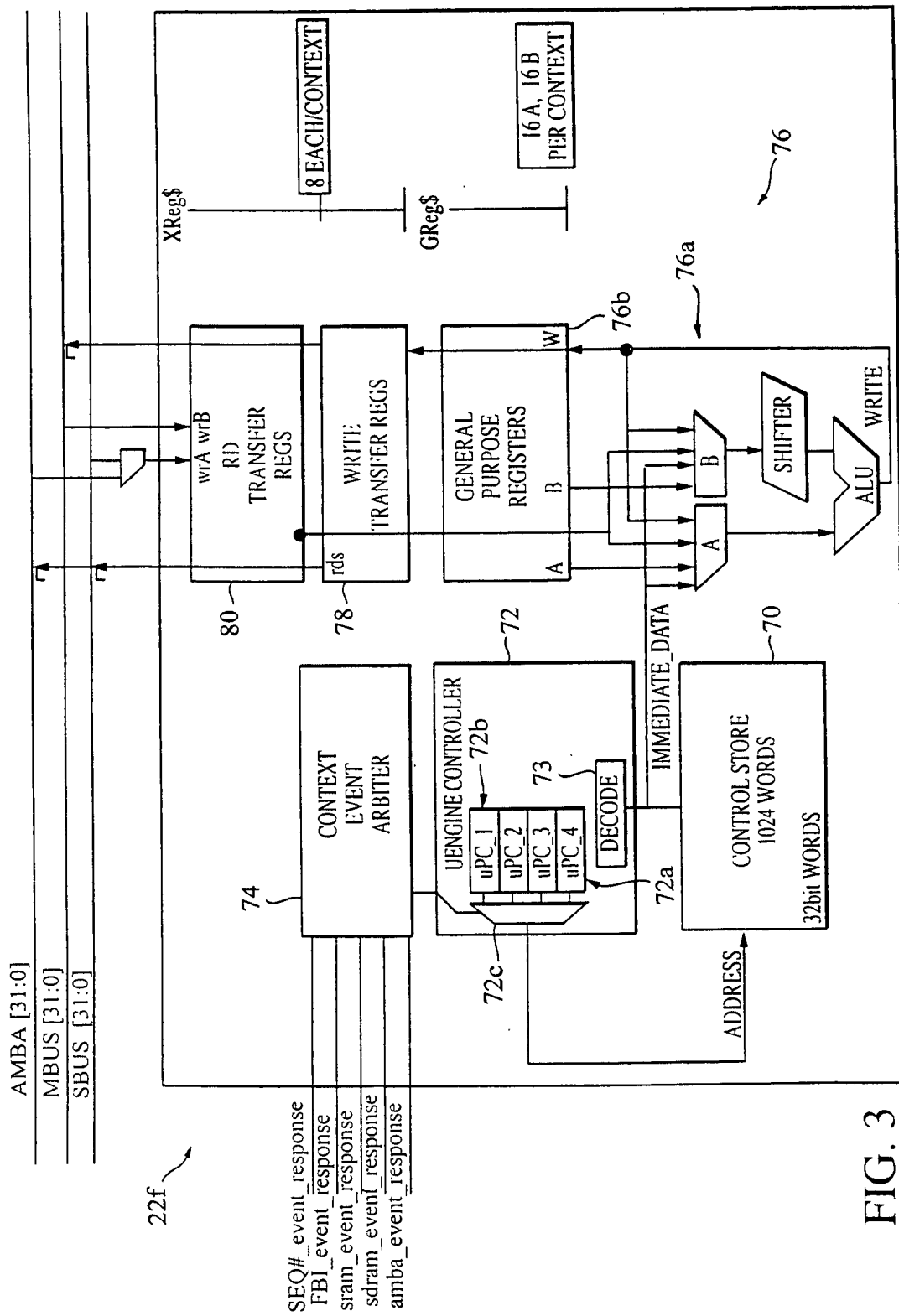


FIG. 3

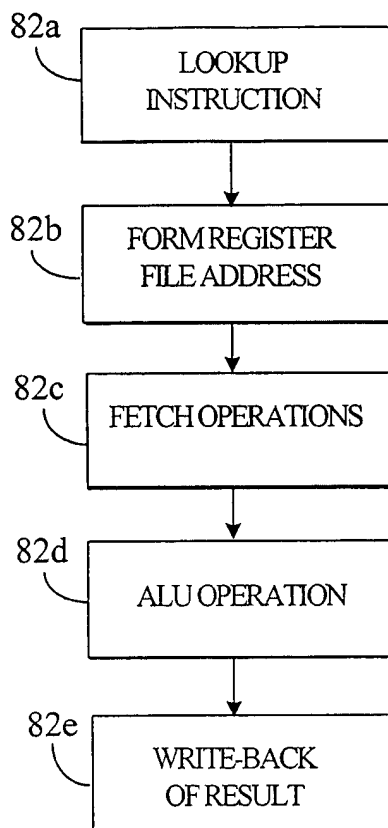


FIG. 4



ALU/SHIFT (set cc)	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	0	0	sw	shift	rel	dest	reg		amount	rs	A	rel	source	B	rel	source	ro	im	Bi													
ALU/SHIFT (set cc)	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	0	0	sw	shift	rel	dest	reg		amount		immediate	B	rel	source																		
ALU/SHIFT (set cc)	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	0	0	sw	shift	rel	dest	reg		amount		A	rel	source	immediate																		
ALU/SHIFT (set cc)	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	1	0	0		dest	reg		sw	A	absolute	source	loB	Abs	Sec	Up	B	Sr	I														

Shift Decode:
(rs,r0) decode ([31:0] shifts into [63:32] and take [63:32]):
00 = left rotate
01 = right shift (32-ShfAmt = Right Shift Amt)
10 = left shift
11 = double shift (upper A-op shifts into lower B-op)
====> "left rotate" of zero gives zero shift (therwise zero amount signifies indirect shift)

ALU-OP decode:
0000 = B 0100 = ~A&B (~and) 1000 = A-B 1100 = A+B(8)
0001 = ~B 0101 = XOR 1001 = B-A 1101 = A+B(16)
0010 = A&B (and) 0110 = OR 1010 = 1110 = A+B
0011 = A&~B (and~) 0111 = mul-stuff 1011 = 1111 = A+B+Cin

FIG. 5